

We claim:

1. A process for imaging a printing plate having a coating comprising diazo compounds, comprising the step of applying imagewise an insolubilizing chemical to the coating.
2. The process of claim 1 wherein the insolubilizing chemical is in the form of an aqueous solution having a pH greater than 7.5.
3. The process of claim 1 wherein the coating is aqueous borne.
4. The process of claim 2 wherein the imagewise application of the insolubilizing chemical is performed using an ink jet printhead.
5. The process of claim 1 wherein the insolubilizing chemical causes the diazo functional groups in the coating to chemically react.
6. The process of claim 5 comprising the further steps of:
 - (a) heating the plate, and
 - (b) applying a developer solution to the plate.
7. The process of claim 5 wherein the applied insolubilizing chemical is in an aqueous solution having a pH between 7.5 and 13.5.
8. The process of claim 4 wherein individual drops of the solution applied by the ink jet printhead have a volume in the range of 1 to 100 picoliters.
9. The process of claim 4 wherein individual drops applied to the plate by the ink jet printhead create image dots having approximate diameter in the range of 10 to 100 microns.
10. The process of claim 4 wherein individual drops applied to the plate by the ink jet printhead result in individual image dots in the coating having areas in the range of 80 to 8000 microns squared.

For the prior art

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11. The process of claim 6 further comprising the step of exposing the developed plate with a UV lamp.

12. A printing plate, comprising:

- (a) a substrate having a coated surface comprising diazo compounds and characterized by an effective pH, and
- (b) on part of the coated surface, a latent image defined by a region of higher effective pH.

13. A printing plate, comprising:

- (a) an aluminum substrate having a surface,
- (b) on the surface, a coating comprising diazo resins and wherein the coating is characterized by an effective water concentration, and wherein further
- (c) a part of the coating defines an image characterized by a different water concentration.

14. A printing plate, comprising:

- (a) an aluminum substrate having a surface,
- (b) on the surface, a coating comprising diazo resins wherein the coating is characterized by an effective pH, and wherein further
- (c) a part of the coating defines an image characterized by a higher effective pH.

15. A printing plate, comprising:

- (a) a substrate having a surface,
- (b) on part of the surface, a coating insoluble in a developer, wherein said insolubility has been imparted by reaction with hydroxyl ions.

16. A printing plate according to claim 15, wherein the substrate is aluminum.

17. A printing plate having a coated surface, comprising

- (a) a substrate having a surface,
- (b) on the surface, a coating comprising diazo compounds,
- (c) wherein the coated surface is characterized by an effective concentration of water,

and

- (d) wherein on a part of the coated surface, there is defined a latent image characterized by a region of different effective water concentration.

18. A printing plate according to claim 17 wherein the diazo resins in the latent image are insoluble in a developer.

19. A computer to plate system, comprising:

- a) a printhead containing a plurality of ink jet nozzles such that the printhead is capable of jetting imagewise a basic solution,
- b) a printing plate having a coated surface containing diazo compounds capable of being imaged by the printhead, and
- c) a developer capable of dissolving the non-imaged coating.

20. A computer to plate system, comprising:

- (a) an ink jet printer with a printhead capable of imaging printing plates,
- (b) an ink capable of insolubilizing a coating containing diazo compounds,
- (c) a printing plate having a coating comprising diazo compounds.

21. A computer to plate system according to claim 20, wherein said coating is aqueous-borne.

22. A computer to plate system according to claim 21, wherein said coating further contains latex.

23. A computer to plate system according to claim 20, wherein said ink jet printer is partially or wholly manufactured by Epson Corporation.
24. A computer to plate system according to claim 20, wherein said printhead is a piezoelectric drop on demand printhead.
25. A computer to plate system according to claim 20, wherein said printhead under normal operating conditions generates drops with diameters in the range from 10 to 50 microns.

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